

SPECIFICATION

1. Title of the Invention

STATOR COIL OF ROTATING ELECTRIC MACHINE

2. Claim

1) A stator coil of a rotating electric machine characterized in that the number of conductors arranged in a direction, which corresponds to a slot width direction of a portion inserted into a slot of a stator core, of coil end portions provided with a drawn line is smaller than the number of conductors arranged in the slot width direction.

3. Detailed Description of the Invention

The present invention relates to a stator coil of a rotating electric machine. Fig. 1 is a perspective view of a stator coil of a rotating electric machine in the related art, and Fig. 2 is a partial side view of the stator coil shown in Fig. 1. A plurality of insulated conductors are wound in parallel in the stator coil. The stator coil includes straight portions 1 and 2 inserted into a slot of a stator core and coil end portions 3 and 4 connecting the straight portions 1 and 2, and an insulating layer is formed thereon. In the stator coil, the number of conductors arranged in a slot width direction of the straight portions 1 and 2 is equal to the number of conductors arranged in the direction corresponding to the slot width direction of the coil end portions 3 and 4. In the coil end portions 3, a drawn line 5 is drawn as a winding start

portion of the conductors and a drawn line 6 is drawn as a winding end portion of the conductors. By the drawn lines 5 and 6, the stator coil is connected to each climax and is then connected to a power source. Fig. 3 is a perspective view of the coil end portions of the stator coil. The straight portions 1 and 2 are inserted into a slot 9 disposed along a cylindrical inner surface 8 of a stator core 7. Accordingly, the coil end portions 3 are located on a circle and the drawn line 5 which first contacts the winding of the conductors is drawn from between the coil end portions 3. For this reason, in the stator coil which is large in the width direction, a sufficient gap cannot be guaranteed between the coil end portions 3 and the drawn line 5. Accordingly, there is a problem in that the coil end portions 3 come in contact with the drawn lines 5 and the insulation is damaged due to vibrations in operation or electromagnetic forces, thereby causing an accident.

The invention is designed to solve the above-mentioned problem, and an object thereof is to provide a stator coil of a rotating electric machine which does not cause accidents.

According to the invention, the above-mentioned object is accomplished by a stator coil of a rotating electric machine characterized in that the number of conductors arranged in a direction, which corresponds to a slot width direction of a portion inserted into a slot of a stator core, of coil end

portions provided with a drawn line is smaller than the number of conductors arranged in the slot width direction.

Hereinafter, an embodiment of the invention will be described with reference to the accompanying drawings. Fig. 4 is a partial side view of a stator coil of a rotating electric machine according to an embodiment of the invention, Fig. 5 is a lateral sectional view of a portion inserted into a slot in Fig. 4, and Fig. 6 is a sectional view taken along line VI-VI in Fig. 4. The stator coil includes straight portions 11 and 12 inserted into a slot and coil end portions 13 and 14 (where 14 is not shown) connecting the straight portions 11 and 12. In the coil end portion 13, a drawn line 16 is drawn as a winding start portion of a conductor 15 and a drawn line 17 is drawn as a winding end portion of the conductor 15. The stator coil is formed by winding the insulated conductor 15. In the straight portions 11 and 12, the conductor 15 is arranged in two lines in the slot width direction as shown in Fig. 5. In ~~the coil end portion 13, the conductor is arranged in one line~~ as shown in Fig. 6. An insulating layer 18 is formed thereon.

As described above, in the stator coil according to the invention, since the number of conductors arranged in the direction corresponding to the slot width direction in the coil end portion close to the drawn lines is smaller than that in the portion inserted into the slot, the width of the coil end portion decreases and a sufficient gap can be guaranteed

between the coil end portions and the drawn lines. Therefore, accidents are not caused due to damage of the insulation.

4. Brief Description of the Drawings

Fig. 1 is a perspective view of a stator coil of a conventional rotating electric machine. Fig. 2 is a partial side view of the stator coil shown in Fig. 1. Fig. 3 is a perspective view of a coil end portion of the stator coil of the rotating electric machine. Fig. 4 is a partial side view of a stator coil of a rotating electric machine according to an embodiment of the invention. Fig. 5 is a lateral sectional view of a portion inserted into a slot in Fig. 4. Fig. 6 is a sectional view taken along line VI-VI in Fig. 4.

11, 12: PORTION INSERTED INTO SLOT (STRAIGHT PORTION)

13: COIL END PORTION

15: CONDUCTOR

16, 17: DRAWN LINE

⑩ 日本国特許庁 (JP)
 ⑫ 公開実用新案公報 (U)

⑬ 実用新案出願公開

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審査請求 未請求

(全 2 頁)

⑯ 回転電機の固定子コイル

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富士電機製造株式会社内

⑱ 出 願 昭54(1979)5月30日

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⑳ 考 案 者 山科洋美

㉑ 代 理 人 弁理士 山口巖

㉒ 実用新案登録請求の範囲

固定子鉄心のスロットに挿入される部分のスロット幅方向の導体の配列数よりも引出線が設けられた側のコイルエンド部分の前記スロット幅方向に対応する方向の導体の配列数を少なくしたことを特徴とする回転電機の固定子コイル。

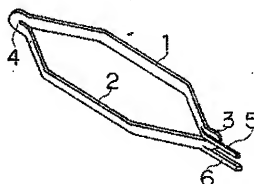
図面の簡単な説明

第 1 図は従来の回転電機の固定子コイルの斜視図、第 2 図は第 1 図のものの部分的側面図、第 3

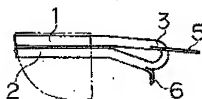
図は回転電機の固定子コイルのコイルエンド部分の斜視図、第 4 図はこの考案の一実施例による回転電機の固定子コイルの部分的側面図、第 5 図は第 4 図のもののスロットに挿入される部分の横断面図、第 6 図は第 4 図のものの Y-Y' 矢視断面図である。

1 1、1 2……スロットに挿入される部分（直接部分）、1 3……コイルエンド部分、1 5……導体、1 6、1 7……引出線。

オ 1 図

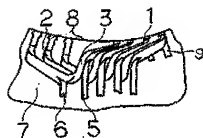


オ 2 図

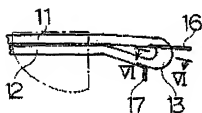


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* 3 図



* 4 図



* 5 図



* 6 図

